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ABSTRACT

Factors that distinguish the health disciplines from the traditional and career-oriented disciplines, trends that will affect the allied health disciplines, and considerations for the development of new allied health education programs are considered. Topics of consideration include: start-up and continuation costs, advantages and disadvantages of outside funding, professional accreditation, certification, state licensure, faculty, teaching loads and clinical programs, administrative placement of allied health programs, facilities and equipment, clinical affiliations, planning, and projecting enrollment and recruitment. Allied health programs are offered at associate degree, baccalaureate, and master's levels. It is noted that clinical education is the unique characteristic of the health disciplines, and that allied health educational programs are expensive to initiate and to maintain. In the future the emphasis in allied health education will be increasingly on quality rather than quantity. (SW)

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CREATING NEW ALLIED HEALTH PROGRAMS: CONSIDERATIONS AND CONSTRAINTS

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SOUTHERN REGIONAL EDUCATION BOARD

CREATING NEW ALLIED HEALTH PROGRAMS: CONSIDERATIONS AND CONSTRAINTS

Pat Malone

Southern Regional Education Board
130 Sixth Street, N.W.
Atlanta, Georgia 30313
1979

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INTRODUCTION

This publication is designed for academic administrators who have had limited orientation to the allied health disciplines. It explores some of the factors which make the health disciplines differ from the traditional and career-oriented collegiate disciplines, some of the trends which will affect the allied health disciplines, and some of the considerations needed to make thoughtful assessments in the development of new allied health education programs.

For the past decade there has been a proliferation of new collegiate programs in allied health. Among the more than 40 major allied health specialties appropriate for two-year colleges, four-year institutions, and universities, there are numerous choices for new curricula.

Establishing new allied health programs proves an arduous undertaking in many colleges. The allied health specialties, in common with other health disciplines, have evolved a new educational format—an articulation between academic and practical learning experiences. While this format initially incorporated components from traditional collegiate education and from occupational training, the merger of methodologies results in a unique learning experience. Its successful implementation requires insight into the structure and characteristics of education in the health disciplines.

The health disciplines are dynamic. Allied health specialties change in the sites of educational programs, requirements for practice, and in the services delivered. A new allied health education program, once established, will require considerable flexibility to keep pace with the developments in clinical practice.

A general trend in allied health education is the shift from emphasis on quantity to stress on quality. National concern for cost containment in health care has extended into educational programs, and employers are directing more attention to proficiency of graduates. Quality of the educational programs will become an increasingly important consideration in employment of allied health practitioners.

Establishing quality programs in the allied health disciplines requires substantial commitment by colleges. Allied health programs will absorb a significant percentage of an institution's resources and although there have been limited federal funds for allied health education in the past, such funds will probably be reduced in the future.

Introducing an allied health program into an institution's curriculum can be an expensive and difficult undertaking. Educational administrators must make careful decisions, based on the best interest of the educational institutions.

CHAPTER I — OVERVIEW

Allied health fields are relative newcomers to higher education. Most of the fields have originated within the past three decades and many of them are still taught in service settings, such as hospitals.

The allied health fields are in a dynamic stage. New fields are being developed and the knowledge and skills of practitioners in the older fields are undergoing continuous change. Of the 24 allied health fields accredited by the American Medical Association's Committee on Allied Health Education and Accreditation and listed in *The Allied Health Education Directory, 1978*, 18 of the fields were formalized between 1960 and 1978.

New allied health fields develop differently from most academic disciplines. A health field usually begins in a service setting when a function being performed by health professionals could be done by other individuals if they are given specific training. Initially the training is given in the service setting, with the health professionals as faculty. The first students are usually people already employed by a health service.

If the new practitioners function effectively, the idea spreads to other health facilities, which start their own training programs. At this stage, a new allied health specialty is created. Once a number of people are trained and employed in the new health specialty, a job classification is developed, a professional organization is established, and educational standards are set for the new program.

While approximately half of the allied health educational programs are based in hospitals, there is a trend toward increasing allied health specialties in educational institutions. There is no general agreement on the preferred level for many of the allied health disciplines and, in many cases, students have a choice of taking their basic allied health preparation in technical schools, two-year colleges, four-year institutions, universities, or in hospitals.

Allied Health and the Traditional Curricula

There is a basic philosophic difference in objectives between traditional collegiate education and health specialty preparation: Colleges seek to prepare educationally well-rounded individuals while health fields must prepare competent practitioners. While these two objectives are not totally incompatible, they often produce ideological conflict in college-based health programs.

Since the older allied health disciplines were based in hospitals when their curricula were established, little provision was made for general education. By strict academic interpretation, all health professions originated as occupational training. Some liberal arts purists refer to schools of medicine and dentistry as "the university's trade schools."

Most allied health disciplines now have educational prerequisites, such as high school graduation, two years of college or, in a few cases, a baccalaureate degree. Once a student enters a basic professional program, the allied health curriculum is

relatively rigid and there is minimal opportunity for electives or general arts and sciences courses.

All allied health disciplines require clinical or field education. Classroom instruction given in the college setting is not sufficient preparation for health practitioners, and laboratory simulation of a clinical situation cannot provide the range of clinical experiences necessary for practice. Experience in a wide variety of clinical settings, such as hospitals, clinics, public health programs and other services pertinent to the specialty, improves the quality of the educational program. The factors involved in clinical education will be discussed in more detail in Chapter Four.

A major field in the arts and sciences is quite different from specialty in an allied health discipline. The major field is an area of emphasis within a broad educational experience. Allied health specialization is educationally narrow, concentrating on the acquisition of specific areas of knowledge and application of learned skills. In the allied health disciplines, learning as much as possible within the total body of related knowledge is not necessarily desirable. Overeducation of health practitioners can result in application of knowledge beyond the legal and professional restrictions of a specific health field.

Even in the academic disciplines associated with health programs, subject matter is often modified to specialized needs. Biology, for example, is included in many health fields but the requirement is for human biology with scant attention to other areas of general biology, with the exception of pathogenic bacteria. If the members of a biology faculty are entomologists or plant biologists, providing human biology courses for health field students may create faculty dissatisfaction.

There has been some experimentation with providing two years of general collegiate education and placing health specialization in the third and fourth years. This approach lengthens education for students in allied health disciplines where specialization and credentialing can be achieved in two post-high school years. If a student can complete a program in respiratory therapy in two years and be employed at the same salary as a student who spends four years in preparation and earns a college degree, there is little incentive for students to seek the degree unless they plan to teach in the field. Some students cherish hopes that employers will recognize the degree with higher salaries and promotions; this is seldom the case.

Pros and Cons for Creating Allied Health Programs

Health planning agencies, hospitals and professional groups often urge college administrators to develop programs in the health fields which appear to be needed in the college's service area. College administrators should view these requests with considerable caution and meticulous fact-finding.

The perceived need for allied health practitioners may be far more optimistic than the actual employment potential for graduates. A few years ago a junior college was persuaded to open a program in dental hygiene. Health professionals presented impressive evidence to indicate that the geographical area from which the college drew students had a shortage of dentists and almost no dental hygienists. The college undertook the program, which required heavy capital outlay for space, dental chairs, and supportive equipment. The first classes of graduates were employed promptly, but within a few years the number of graduates exceeded the number of available jobs. The shortage of dentists limited the number of potential employers and many of the dentists who approved the idea of the dental hygiene program did not plan to employ hygienists. Enrollment in the program dropped.

This dental hygiene experience has been replicated in various allied health specialties. Evidence that a geographical area has an acute shortage of certain types of practitioners is no assurance that the practitioners will be employed if they are

available. Since one factor attracting students to health fields is good employment potential, a lack of jobs will produce declining enrollment and that trend will be hard to overcome even if the employment potential improves.

All types of allied health programs are expensive, both in start-up costs and in continuation expense. When a college has or can acquire ample resources and the program fills a continuing need in the area, then the program can be valuable to the educational institution, to the students and to the community.

Some of the questions college administrators need answered before opening a health program are:

- Does the college have sufficient resources to invest in the allied health program?
- How many practitioners are employed in the college's service area?
- Will potential employers in the area budget for positions for practitioners?
- Are other colleges, hospitals, or technical schools in the area preparing practitioners?
- What will the program cost, both in start-up and continuation expense?
- Are qualified faculty members available?
- Are clinical education sites of adequate scope and quality available for the program?
- Is the program compatible with the college's philosophy and primary mission?
- Is the field sufficiently well-known to attract students?

A favorable factor in allied health is the popularity of these specialties among prospective students. The apparently insatiable appetite of the health industry for qualified practitioners in a spectrum of specialized areas offers good employment potential in most cases. Also the mystique of the health services attracts contemporary students as journalism once attracted their elders. Student enthusiasm for a new allied health field should be tempered by good counseling about the realities of practice in the health field or the attrition rate will be exceptionally high.

Allied health programs absorb a disproportionate share of a college's resources but they can enhance the college's program and enlarge enrollments if they are successful. College administrators must make soul- and budget-searching decisions on each proposed discipline to determine if the program will really benefit the institution.

The Allied Health Fields

As an identifying term, "allied health," is similar to "arts and sciences." Both are used as brief identification of an array of disciplines and subspecialties. At one time the term "paramedical" was used to identify allied health specialties but it brought objection from those practitioners not directly related to medicine. A dental group suggested that, in some health services, physicians could be considered "paradental." Generally, the term "allied health" implies the range of specialties which are related to or supportive of the established, doctoral-level health professionals.

Lists of the allied health specialties differ, depending on the agency preparing the list and the purpose for the listing. There is notable variance between the employment and the educational perspectives. Several hundred job titles are incorporated in allied health categories, but many of these have duplicative basic preparation and reflect different employment levels or employment sites.

Some of the allied health specialties grouped by the orientation of their work are:

- Those which provide technical expertise to medical and health systems but which do not involve the practitioner in direct patient care, such as epidemiology, biomedical engineering, toxicology, pharmacology, microbiology, biometery, biostatistics, biophysics, nuclear physics, ergonomics, industrial hygiene, and the environmental health sciences. These usually require

baccalaureate or graduate-level preparation.

- Those in which practitioners provide direct services to patients, including such specialties as clinical nutrition, dental hygiene, occupational therapy, physical therapy, respiratory therapy, special therapies (art, music, recreation, etc.), radiation therapy technology, clinical health education and physician assisting. These usually require two to six years of post-high school preparation.

- Those providing technical services relating to diagnosis and treatment, including medical technology, nuclear medicine technology, radiologic technology, electroencephalograph technology, electrocardiograph technology, medical and dental laboratory technology, pharmacy technology, histology, cytology, and medical librarianship. These usually require from one to five years of post-high school preparation.

- Those relating primarily to the administration of health services, including health facility (or hospital) administration, medical records administration, medical records technology, institutional dietetics, and medical and dental office assisting. These require from one to six years of post-high school preparation.

There are numerous other specialties frequently included in the allied health category. Many of these are subspecialties in which the primary preparation is in a discipline outside the health field but in which a health-related application has been identified. Such areas as hospital engineering, medical social work, medical/science writing and special education are more appropriately considered within their basic professions except for the health phase of the educational program. As educational programs, they offer desirable health specializations when a college or university has sufficient resources to add the health emphasis to an existing program. Generally these fields prove excessively expensive to develop if an educational institution has to establish both the basic discipline and the health emphasis at the same time.

Appropriate Educational Levels for Allied Health

In most collegiate settings, there is general consensus on the appropriate course levels. This is not the case with allied health programs. While some of the older programs have found their educational niche, many of the newer programs are offered at a variety of educational levels.

For example, there are educational programs for radiologic technologists and respiratory therapists in all types of institutions: vocational-technical schools, two-year colleges, senior colleges, university medical centers and hospitals. In the basic professional programs, students can receive certificates, associate degrees, baccalauareate degrees, or sometimes master's degrees.

Even administrators of medical schools and academic decision-makers familiar with the allied health fields demonstrate a lack of consensus on the educational placement of many allied health educational programs. Within the complex of educational programs offered by a single university medical school and by its teaching hospital, some allied health students will be enrolled in university-based programs and others in hospital-based programs. Entering students are often not sure which institution is responsible for their education. In some cases, the university-based programs and the hospital-based programs in a university's teaching hospital have such minor differentiations that few people outside the institutional business offices and registrar's offices are sure which are university students and which are hospital students.

Precedent can be found for the placement of allied health programs at various educational levels. This is an educational decision which can be based on local situations and institutional preferences.

There are numerous criteria for decision

making. If students usually enter a health educational program immediately after high school graduation and complete the requirements for practice in two years, the program is appropriate for an associate degree. Academic planners should review the specifications of the credentialing agency to be sure the curriculum and timeframe are educationally sound. Factors to be considered in the evaluation include the amount of information the practitioner is expected to assimilate, the degree to which the practitioner must rely on independent judgment or on supervisory direction, and the effectiveness of the existing educational program.

State higher education agencies and educational planners have considerable responsibility in determining the level and length of health field preparation in their states' institutions. There are two general trends, both with economic implications, to be considered. One is the pressure from professional organizations to extend and upgrade the educational programs for the purpose of raising salaries and increasing prestige. There are many examples of lengthening preparation programs for careers but few positive indicators that extending education has created improvement. For example, business did not reflect increased efficiency when the master's became the popular entry-level degree for management and there has been no notable increase in the quality of public education with the growing numbers of master's degree teachers. While many factors affect broad career areas, extending educational requirements for career entry discourages potential students, particularly when the career's rewards in salary and prestige are equal to those of careers with shorter educational routes. Educators have primary responsibility for maintaining allied health programs at educational levels consistent with practice needs.

The other general trend in the allied health disciplines is for potential employers to urge educational institutions to prepare practitioners to function at higher levels than their educational program warrants. There is pressure on the educational institutions to prepare technicians to perform functions more appropriate for more extensively prepared technologists. Particularly in areas of health manpower shortages, employers want allied health practitioners over-prepared. Responding to these pressures can produce poor practitioners who, in learning extended skills, may not have fully mastered the basics and who may be taking on responsibilities at a higher level than that for which they are reimbursed.

A situation in which extension of the educational programs merits consideration is in programs to prepare instructors. In allied health fields where the customary preparation is two years beyond high school, there is a shortage of faculty members with baccalaureate and advanced degrees. It is exceptionally expensive to expand a two-year program to four or more years for the purpose of preparing teachers. This and other considerations relating to faculty will be explored more fully in Chapter Four.

New Allied Health Specialties

At any time, there are usually several potential new allied health specialties in the developmental stage. New fields stem from four major sources: 1) new technologies or treatments which require individuals with special training; 2) simplification of equipment or procedures in a diagnostic or treatment modality which makes it possible for someone with technical specialization to perform the service; 3) emerging services, especially for chronic illnesses, which require extensive time with patients; and 4) development of assisting or supportive levels of workers for existing allied health specialties.

Assessing the potential of a developing health field is difficult. Some fields, such as respiratory therapy and emergency medical technology, have grown rapidly and the demand for practitioners has exceeded the supply. Other fields, such as medical illustrating, have been much slower in development and the demand has been uneven and relatively unpredictable. Before committing substantial resources

to educational programs in new health disciplines, educational planners should seek answers to a number of practice-related questions, including the following:

- Will the service of new practitioners be covered by Medicare, Medicaid and health insurance?
- Are there any legal or professional restrictions on the new practitioners that will tend to inhibit utilization of graduates?
- Is the new specialty sufficiently different from existing specialties to justify the development of a new educational program?
- What degree of liability does the supervisor of the new practitioners assume?

Unless a new specialty provides a service that will be reimbursable by third-party payments (Medicare, Medicaid and insurance), its development will be uncertain. No matter how much the service may benefit patients or improve staff utilization in a health facility, graduates will not be employed in substantial numbers until the health facility can be assued of payment for the service. Third-party payments constitute a significant percentage of the income of health services, and the rules and regulations of the reimbursement programs tend to set the standards for services and health field employment.

Within the legal and professional requirements for practice, there are numerous constraints on the practitioners in certain health services. A developing allied health specialty may have no problems in one state, but its graduates may not be able to function in another state because of licensure restrictions. For example, in many states, medical practice acts reserve solely to physicians the right to "puncture the skin." Unless these practice acts allow certain other health professions this function, the routine intravenous procedures performed by several categories of allied health practitioners are at odds with legal requirements. In reviewing the advisability of developing new types of allied health specialties, practice legislation for all related professions needs careful study.

The question of the liability of the supervising practitioner for the actions of a practitioner in a new health specialty is critical to the new specialty's development. If the supervising practitioner has full responsibility and liability for the new practitioner, and the addition of the new practitioner raises the already expensive malpractice insurance rates, the new field probably will develop slowly and graduates of the program will have some difficulty in finding employment.

In terms of new health specialties, some future directions can be anticipated. Increased use of computers in all areas of health services will produce new specialties and result in more emphasis on electronic data processing in the curricula of older professions.

Expansion of the technology, particularly in the therapeutic use of ionizing and nonionizing radiation, may create some new specialty areas. The impact of ultrasonics and lasers on therapeutic services is just beginning to emerge.

The broad research in genetics, which is causing considerable controversy in health and educational circles, has potential for developing some new allied health specialties for supportive services in genetic counseling.

There will be new health disciplines developing. Decision-makers in higher education must be prepared to make thoughtful evaluations before introducing new curricula into the college programs.

CHAPTER II —
ECONOMICS OF ALLIED HEALTH EDUCATION

Programs in most of the health disciplines are more expensive to initiate and to continue than are programs in the arts and sciences for similar degree levels. Health professions education, including medicine and its teaching hospitals, consumes approximately 17 percent of the total higher education budget in the United States.

Within the total complex of health disciplines, allied health receives about 15 percent as compared to basic and graduate medical education which claim some 58 percent of the total health professions education dollars. Based on the annual report of the Bureau of Health Manpower for Fiscal Year 1978, of the $521.6 million awarded by the Bureau of Health Manpower, $21.9 million went to allied health programs.

Start-up Costs

In opening a new allied health program, a college should budget for a one-year planning period, with the program director and one or more faculty members employed. The budget for the planning year should include acquisition funds for equipment, library and teaching resources and other items which will be needed to open the program.

During the planning year the program director will spend considerable time assessing and negotiating with clinical facilities for clinical education, planning the program curriculum and submitting the proposed curriculum to accrediting and licensing agencies for approval, acquiring library and instructional materials, and selecting any special equipment needed.

When policies of the college or higher education system do not permit the employment of faculty in advance of opening the program, the program director should be brought in on a consultative basis, particularly for selection of clinical facilities and the subsequent negotiations, and for making contacts with the credentialing agencies.

Start-up costs may be considerably higher when a program director cannot be recruited or employed for the planning period. A good program director can evaluate the educational institution's equipment needs in relation to the equipment available in the clinical facility and can determine which items are essential and which are nice but not necessary. Relatively few college purchasing officers have had experience in purchasing specialized health equipment and supplies at the most advantageous price.

In many of the allied health fields, there is a variety of good audiovisual materials. Many of these have been developed for clinical in-service training and focus on the clinical education phases of the allied health programs. The audiovisual materials are particularly valuable in illustrating types of cases which may not occur frequently in the clinical facility and in demonstrating good techniques. In most

cases, the allied health fields will need more audiovisual materials than are typically budgeted for individual academic programs.

During the start-up period, if the first year of a two-year program or the first two years of a four-year program involve primarily classroom instruction, it is possible to defer employment of the full staff until the first class reaches the clinical phase. Some accrediting and licensing agencies do not favor delayed staffing and any variation from the proposed plans submitted for preliminary program approval should be checked with appropriate agencies. In any case, the full teaching staff should be recruited and employed in ample time for the program director to familiarize new staff with the college's policies, the curriculum and the clinical facilities.

Changes are occurring in the expenses relating to clinical affiliations. In the past, hospitals did not charge colleges and universities for clinical education. In fact, when hospitals urge colleges to initiate allied health educational programs, the hospitals are usually generous in providing facilities and sometimes clinical faculty. The customary practice now is for colleges either to employ the clinical faculty or for the colleges to reimburse the hospital staff for clinical teaching. In some geographical areas, hospitals are requiring a fee for use of facilities for educational purposes. Payment for the use of clinical facilities can be a significant expense in initiating an allied health educational program.

A cost consideration in health specialty programs is that of liability insurance for faculty members in the clinical facility. There are no sharp, well-precedented definitions regarding the responsibility for health care delivered by students, and statutes vary within the states. It is a credit to the care and caution of clinical educators that few court actions relating to health care and malpractice have involved care by students. The amount and scope of liability insurance needed will depend on state laws, the areas of responsibility contained in the contract, or agreement with the clinical facility and the type of allied health specialty. Generally, the question of liability is most acute in those disciplines where students are being prepared to give care to patients, and the general custom is that the clinical instructor, who is credentialed, is responsible for the actions of the students. If the allied health field requires a medical director, even on a part-time basis, the cost of malpractice insurance can be substantial.

In estimating the start-up costs for an allied health education program, it is possible to utilize the costs of programs of similar size, length and educational level, then add in the costs of special allied health requirements. These special costs may include:

- Construction, modification or renovation of space.
- Special equipment needed at the educational institution, and any rewiring, shielding or structural modification needed to accommodate the equipment.
- Faculty salaries, with consideration of the low student/faculty ratio in clinical education.
- Audiovisual materials.
- Library resources, which will usually include professional journals.
- Any costs relating to the use of clinical facilities.
- Liability insurance coverage.

There will be other cost variables, depending on the educational institution's existing resources, the resources of the clinical facility and the type of allied health program being planned.

Continuation Costs

There is no standard or average cost that can be applied in the allied health fields. A sampling of operating costs, based on the information accumulated by the Health Resources Administration of DHEW for 1973-1975 and published in *State Programs Supporting Health Manpower Training: An Inventory, Volume 1*, indicates considerable variation in cost per student per year. The cost variations are in part the

result of the differences in actual cost of programs as well as in the different methods of cost identification. Educational institutions which identify only instructional expenses indicate a lower per-student rate than those who include all allied health expenses. A sampling of programs indicates a per-student per-year cost range of $634 to $4,421 for occupational therapy, $976 to $4,444 for physical therapy, $577 to $2,344 for dental hygiene, $797 to $5,685 in radiologic technology, $732 to $1,552 in respiratory therapy, $879 to $3,469 in environmental health sciences and $648 to $1,109 in audiology/speech pathology. From the published information there appears to be little relationship between the length and cost of programs. For example, in one institution a two-year program in dental hygiene has a per-student annual cost of $1,149 while a four-year program costs $879. In some specialties, a per-student cost in excess of $5,000 a year is not unusual.

The Tennessee Higher Education Commission prepared cost studies for the health professions, excluding medicine and dentistry. In 1977, in Tennessee the instructional cost for delivering one credit hour in baccalaureate and higher programs was $51.01 and for associate degree and below, the cost was $51.23 per credit hour. This compares with an average instructional cost of $25.53 per credit hour for all programs of study in higher education.

A major factor in cost-per-student estimates is the program's ability to recruit and to retain an optimum enrollment. A program designed and staffed for 50 students which enrolls 25 students obviously will have a high per-student cost. Good planning in designing the size of programs is vital to economical operation of the program.

The major factors influencing continuation costs are faculty salaries, the amount and degree of sophistication of equipment the college must maintain, and the program enrollment in relation to the program capacity.

From a strictly fiscal point of view, most one- and two-year programs are less expensive than baccalaureate and advanced degree programs. Programs which permit higher ratio of students to faculty in clinical facilities are less expensive than those programs which require low student/faculty ratios. Programs which require extensive clinical education are more expensive than those with minimal clinical requirements.

Ups and Downs of Outside Funding

The growth of health professions education has been spurred by rather generous federal funding. While allied health has been delegated to the lower ranges of federal health allocations, in comparison to college programs in the arts and sciences, the federal funding in health specialties has been sufficient to encourage the opening of numerous programs.

In the allocation of federal health funds for education, medicine has customarily received the largest percentage, with dentistry, pharmacy and veterinary medicine in the second echelon. Funds for nursing have been elastic, with generous allocations when the federal budget was large but with sharp cuts when budgets were reduced. Generally the pattern is that allied health fields are last to be funded in good times and first to be cut when resources are reduced.

For allied health, the flow of federal support funds is uncertain. Dependence on direct federal assistance to develop and maintain any program—particularly an allied health program—is hazardous.

Allied health, encompassing so many different specialties and numerous comparatively small professional organizations, has not developed a strong, coordinated approach to making its needs known. The chief advocates for allied health have been hospitals and educational institutions. Each of these groups has other more direct interests in the allocation of federal funds than support for allied health programs.

In the broad spectrum of health professions education, federal funds have been a significant enabling factor in initial

development and in expansion. Allied health has been a direct and an indirect beneficiary of federal support. Funds for medical libraries and teaching hospitals have served allied health programs although they were developed under the financial support for medical education, dental education and education of other health professions.

Allied health programs developing in sites independent from health science centers will generally find federal support quite limited. Institutions, particularly community colleges, need innovative approaches and good grant-writers to attract federal dollars.

If an educational institution is successful in acquiring federal funds, an important consideration may be a requirement for matching funds. The lure of acquiring several federal dollars for each institutional dollar spent sometimes results in an institution investing a disproportionate amount of its resources in a health program.

For the immediate future, reduced federal funding can be anticipated. In the long range, federal support for allied health will depend on the national economy, the priorities established for health care delivery and the demands for practitioners in particular health specialties.

The patterns of federal funding undergo continuous change. The present trend is toward reduction of health care costs through deemphasis of specialty services and inpatient care and encouragement of primary care and outpatient services. It can be anticipated that the direction of federal funding for educationl programs in health fields will probably parallel projected federal plans for health service delivery.

Another trend in federal funding is the shift of support to individuals. This shift of funds from institutions and agencies to individuals is more evident in health service programs, where the services now draw their primary federal support from individual patients and clients through third-party payments. However, this funding approach is expanding into educational programs through the increasing emphasis on loans and grants to student. Federal planners now believe the country has an adequate number of health practitioners and that the general grants and loans available to all college students are sufficient to maintain the allied health specialties.

From the standpoint of financial support and attraction of students, some allied health fields are educational gambles. Past experience has indicated that certain types of allied health practitioners may be in sudden demand, or no longer needed, because of changes in health care delivery or health care policy. A change in a state's health policy, for example, can eliminate the need for community epidemiologists and health-oriented environmentalists. If the current national emphasis on primary and ambulatory care continues and seriously impacts the health care delivery system, there is a possibility that many of the allied health fields which depend on hospitals for employment may decrease in demand.

There will be changes in allied health specialties, and changes will prove costly to educational institutions which invest their resources in programs which are adversely affected by change. Some allied health specialties will continue in demand for an indefinite period. Educational administrators will need to make careful decisions on which disciplines have good potential and which disciplines may be adversely affected by change.

CHAPTER III — EXTERNAL PROGRAM INFLUENCES

In allied health specialties, opening a new education program involves considerations beyond higher education. Allied health disciplines are based in several types of educational institutions and facilities and at different educational levels. To assure a base line of adequacy of educational programs to provide competent practitioners, various accrediting and approval mechanisms have been developed. These mechanisms exist for each allied health specialty and they vary considerably depending on the nature of the specialty and its educational history.

Generally there are three types of agencies concerned with setting standards for educational programs in allied health specialties: Professional organizations of practitioners, professional organizations of health deliverers who supervise the practitioners, and state licensing or certification agencies.

Professional Accreditation

The largest coalition of professional accreditation groups is the American Medical Association's Committee on Allied Health Education and Accreditation (CAHEA), an umbrella organization for accrediting more than 20 allied health specialties. Consisting of 27 national organizations and 15 review committees, CAHEA sets standards, reviews and accredits educational programs in its specialties. By 1978, CAHEA listed 2,834 accredited allied health programs nationally. In a recent review session, of the 309 programs seeking accreditation, 41 were approved. New programs are assessed on their ability to meet, or preferably to exceed, a listing of "Essentials of an Accredited Educational Program." Each of the CAHEA professional organizations, in collaboration with The American Medical Association (AMA), adopts essentials appropriate to its specialty.

Essentials specify the types of institutions which can offer the educational program, the requirements for clinical education or field experience, minimal length of program, and standards for facilities, faculties, students, records and the curriculum.

Many of the requirements contained in essentials address items that are traditional in higher education, such as the issuing of an official publication containing a description of the program, entrance requirements, tuition, etc. Other requirements familiar to higher education include the maintenance of student records and provision of classroom, laboratory and library facilities.

There are also items in essentials which are relatively new to colleges which have had little experience with health professional organizations. One requirement common to most of the CAHEA fields is that there be an annual report on the program, utilizing forms provided by the appropriate CAHEA committee. Essentials specific to certain fields contain such items as the following:

On student admission—

One or more of the following shall be on record and submitted to the Board of Registry for Medical Technologists for

evaluation prior to entrance in the program:

Evidence of successful completion of high school

Transcript of high school grades

Transcript of college credits.

Regarding the program director—

The director of the educational program must have primary involvement in budgetary planning and expenditure. The director must be fully informed of institutional policies and practices.

On faculty replacement—

Whenever the program director, medical director or director of clinical education submits a formal resignation or ceases to function in the position, the Joint Review Committee for Respiratory Therapy Education must be notified in writing, by certified mail, within ten working days.

As an elaboration of the above statement—

Failure to have any vacated position filled, either temporarily or permanently, within 30 working days during the academic year shall be cause for withdrawal of accreditation.

On keeping of records—

Complete curriculum shall be kept on file including rotation of assignments, lists of instructional aids used to augment the learning experience of the student, copies of the course outline and class schedules. Directed experience and teaching plans shall be kept on file and available for review. Copies of the practical and written examinations should be maintained and continually re-evaluated.

There appears to be a trend toward increasing specificity in essentials. In the newer allied health fields, the essentials generally have lengthier text and often address such items as secretarial support for program administration and faculty, and the role of the program director or education coordinator within the organizational structure of the college or health facility. Essentials of each allied health specialty undergo periodic revision. The complete text of all essentials, as well as the guidelines which amplify the essentials, is published by the AMA in the *Allied Health Education Directory*. A current copy of the *Directory* should be acquired in the preplanning stages.

The American Dental Association (ADA) has developed a professional accreditation mechanism for dental programs. The American Dental Association's Commission on Accreditation of Dental and Dental Auxiliary Educational Programs develops and publishes *Requirements and Guidelines* for allied dental health programs including dental hygiene, dental laboratory technology and dental assisting. ADA's *Guidelines* are the basic requirements for professional accreditation of dental programs.

Dental assisting and dental laboratory technology programs may be offered in postsecondary educational institutions, while dental hygiene programs must be "established in a not-for-profit institution of higher education that is accredited by a regional accrediting agency recognized by the Council on Postsecondary Accreditation."

At the time of the preparation of the most recent *Requirements and Guidelines* in 1975, professional certification was required for employment in dental hygiene but not in dental assisting or dental laboratory technology. As long as that situation exists, professional accreditation of educational programs in those two fields is not absolutely necessary. However, with the emphasis on professional credentialing that exists in health fields, accreditation is highly desirable, particularly in view of the substantial investment an educational institution makes in opening a program in allied dental health.

In a few allied health specialties, such as nutrition and dietetics, the professional association functions independently of other professional groups in program accreditation and certification of graduates. Certification or registration by the professional association is often of major importance to the graduates and their employers. For example, services which require dietitians usually specify

that the dietitian be registered with the American Dietetic Association.

Certification

Certification of allied health practitioners may be a function of either professional organizations or state boards.

In professional certification, the graduates receive certificates in addition to any degrees conferred by the educational institution. Certification identifies the graduate as having met the requirements of educational programs and sometimes as having been examined in the specialty. Graduation from a professionally accredited educational program is a prerequisite for certification in most allied health fields.

In some cases, states have established procedures to certify individuals as competent for practice in that state. This type of certification is frequently provided by an agency of state government which is directly concerned with the provision of service, such as a department or division of public health. State certification programs usually do not require the close coordination with educational institutions that is characteristic of state licensure boards, but there is generally some communication between the certifying agency and the educational programs.

State Licensure

Many of the allied health practitioners who provide direct services to patients are licensed by the states. In most cases, licensure of practitioners also involves approval of educational programs by state licensure boards.

All states have licensure for the traditional health professions, such as medicine, dentistry and nursing. There has been a trend within the past decade toward extending state licensure to many other health occupations and professions.

When a state has practice legislation and a state board, either the practice legislation, the board or both establish some requirements for approval of educational programs. State board approval is separate and distinct from professional accreditation. In many states, some specialties accredited by CAHEA and the dental accrediting program also require state approval of the educational programs. Each state board establishes its own educational and practice requirements for each allied health specialty regulated by licensure.

Coordination with the appropriate state licensure board is important in the earliest planning stages of an allied health education program. Educational administrators can determine the extent to which the board has program-approval authority. It is generally good public relations policy to maintain good communications with the licensure board which will approve an allied health program and license its graduates.

Choices and Constraints for Educational Institutions

In the initial development of an allied health education program, educational administrators are sometimes impatient or overwhelmed with the professional accreditation and program approval procedures. This is particularly true when the process is not understood at the outset and the various requirements become evident after planning is well advanced.

Actually, the accreditation and program approval requirements can be used as an aid in the planning process. For programs accredited under CAHEA, the essentials and guidelines are valuable documents in program planning. Where both professional accreditation and state board program approval are needed for an educational program, it is desirable to establish a planning outline incorporating all educational requirements of the professional association and the state licensure board. If there are any areas in which there appear to be inconsistencies

between the professional and the state requirements, clarification of those areas should be requested from both the professional organization and the state licensing board as early as possible in the planning process.

Both the professional accreditation requirements and the educational requirements for approval by state boards are considered the basic, minimal specifications for an allied health educational program. The educational institution may exceed the minimum and, in fact, is strongly encouraged to do so. A college has both the freedom and the obligation to plan the allied health education program in accord with the institution's primary mission. If the college serves its contiguous geographic area and its graduates depend on local employers for jobs, the allied health education program should reflect to some extent the patterns of practice and the needs of the employers in the local area. If the educational institution prepares graduates to serve an entire state or a region, the educational program may be much broader in terms of employer expectations.

Another decision for academic administrators is that of length of the educational program. This also relates to the philosophy and mission of the institution. If the emphasis is on preparation of numbers of practitioners to meet immediate service needs, then the program length will tend to be close to the minimum allowed by the accrediting agency. If the educational institution specializes in advanced preparation of a comparatively small number of scholars, it may choose to emphasize preparation of instructors and administrators in the allied health field and lengthen the curriculum sufficiently to provide an educational base for future postgraduate work.

One determination which is almost totally the choice of the educational institution is the admissions criteria. While the professional associations list some basic requirements, such as high school graduation or, in cases of some specialty fields, previous health field preparation, most accrediting agencies permit colleges wide latitude in applying admissions policies. One consideration in developing an allied health education program is that of selecting fields appropriate to the institution's mission. For example, a college with highly selective admissions and a high percentage of preprofessional students would proabably not choose to begin a program in a health field where the maximum preparation is at associate degree level and where advancement opportunities are limited.

Consequently, the requirements of professional accreditation bodies not only provide an educational institution some planning guides in developing the program but, if reviewed carefully, the documents provide some indicators as to which allied health programs are appropriate to particular institutions.

The requirements for any allied health field must be met by educational institutions for professional accreditation. Areas of institutional choice are primarily in the determination of how far the college will exceed the minimal requirements. Perhaps the most important choice of the educational institution is the basic one over which the college has total control: whether or not to offer the allied health education program.

CHAPTER IV — RESOURCES AND PLANNING

Resources needed for any educational program can be roughly divided into faculties and facilities. Allied health programs follow this pattern, although the nature of faculty recruitment and facilities needed vary from the more traditional academic programs.

Faculties

Academic administrators have been enjoying a favorable faculty recruitment climate in recent years. Doctoral-level faculty members are readily available in most disciplines of the arts and sciences and the graduate schools continue to turn out potential professional talent at a volume that threatens to flood the academic marketplace. However, this availability of qualified teaching talent does not exist in most allied health fields.

Allied health professionals, in common with practitioners in other function-oriented areas, such as the performing arts, are not usually prepared at post-graduate levels. In fact, in many of the allied health specialties the number of practitioners prepared in their field at master's level is miniscule and doctoral-level preparation is nonexistent. In the allied health specialties where entry into practice takes two years or less of preparation, there is considerable question as to whether the discipline has sufficient scope to extend a meaningful educational experience to four years or to a master's degree. Many allied health professionals who plan to teach in higher education must go completely outside their fields for master's and doctoral degrees and enter a discipline which has little relation to allied health.

Going into a new discipline at graduate level presents problems for allied health practitioners. Most allied health curricula are narrowly focused on the field of practice, and graduates of allied health programs usually do not have the broad educational base for easy entry into new disciplines. There have been cases where allied health practitioners with baccalaureate degrees have spent two to three academic years acquiring the educational background needed for entry into graduate programs in other fields.

At institutions of higher education where advanced academic degrees are vital to faculty status, job security and salary, allied health practitioners have difficulty competing with traditional academic departments, which are heavily staffed with Ph.D. faculty members.

In some of the allied health fields, particularly within the group of CAHEA-accredited programs, a medical director is required. Since the M.D. is a doctoral-level

program, the degree is not a problem. However, there may be recruitment difficulties in finding a medical director in the appropriate specialty. Also the salaries required to attract M.D.s to academia are substantially higher than the customary reimbursement rate for Ph.D.s.

Educational institutions also have to compete with health service delivery programs for the relatively few allied health practitioners who hold advanced degrees. This group is in demand as directors of service delivery programs, as in-service educators in health facilities, and as health planners and evaluators. Health facilities and services often have more elastic budgets than do educational institutions, particularly for employment of supervisory and administrative staff.

Teaching Loads and Clinical Programs

In the traditional disciplines, colleges are generous to their faculties in workload assignments. The schedule is designed to allow ample time for preparation, conferences with students, committee work and, in senior institutions and universities, research and writing. This situation may not apply to faculty members in allied health programs. The difference is primarily in the time demands of clinical education. Many institutions of higher education base teaching loads on the quarter or semester hours of the courses taught. For example, in some community colleges, the average teaching load is 15 hours based on quarter-hour credits. In the traditional disciplines, a 15-hour teaching load would represent three hours per day in classes, plus time for other academic functions. In some courses, the faculty member may have additional laboratory teaching sessions for a total period of no more than 20 hours per week in direct teaching or a total of 200 hours in a 10-week quarter.

By comparison, the allied health disciplines require significantly more faculty time in direct teaching. For example, a course for five credit hours may require five hours of classroom and 10 hours of clinical instruction each week. In a class of 20 students, where as many as five students are permitted in the clinical setting with one instructor, total teaching time for the class is 45 hours per week. Three such courses with a credit-hour value of 15 would require 135 teaching hours per week or 1,350 teaching hours in a ten-week quarter. Credit hours are not a good measure of faculty workload in allied health disciplines.

In some allied health disciplines, the accrediting agency permits only two students per faculty member in clinical education, and rarely is the ratio permitted to exceed eight students per faculty member. In colleges where the number of faculty members in any program is based on the program's enrollment, and where the enrollment ratio requires 20 to 25 students per faculty member, opening an allied health program is not feasible.

Clinical teaching has ramifications beyond the educational experience. The primary purpose of a clinical facility is to serve patients and the welfare of the patients must supersede all other considerations. In classrooms and laboratories, students are expected to make mistakes, but student errors in clinical education can have serious consequences. This is the reason for the low student/faculty ratios in clinical education.

In some situations a clinical facility will allow its staff to provide educational supervision to students. This practice is budget-saving for colleges but it is being recognized as expensive for the clinical facility, and in general, it is being phased out. The more accepted practice is for college faculty members to accompany small groups of students into the clinical facilities and supervise student experiences. Academic administrators have responsibility for monitoring teaching loads for allied health programs, particularly the time involved in clinical teaching. Program quality will be lost if faculty members have excessive teaching loads and, if the situation continues, some faculty members will probably be lost from the institution. A less obvious hazard of excessive teaching loads is that the institution's liability for student actions may increase if evidence indicates that the educational institution has been negligent

in providing adequate faculty supervision in clinical education.

Administrative Placement of Allied Health Programs

The organizational placement of any educational program within a college or university can be a facilitating or a retarding factor in program development. Allied health disciplines, with their many special requirements and exceptions to the academic rules, often do not fit well when organized under a more traditional department.

There is a very human tendency for a department head to believe his or her discipline is one of the more significant offerings in any curriculum, and at times of shrinking enrollments in many of the arts and sciences programs, there is a temptation to add a little extra of one's own discipline to the requirements of the allied health program. If this extends the length of the allied health program beyond that of similar programs in the locality, the result will probably be a high student attrition rate.

Ideally, allied health education programs should be grouped together into a department, a division or a school of allied health. The second best option is to organize the health discipline as an independent department. In community colleges where a single allied health discipline is offered, that discipline may be attached to an existing organizational subdivision, but the head of that organizational entity should become thoroughly familiar with the requirements of the allied health discipline.

Facilities and Equipment

For classroom teaching purposes, the requirements for allied health disciplines are not too different from the needs of other educational programs. Allied health programs need classrooms, faculty offices, library resources and other educationally related resources.

Allied health education programs stress the use of learning laboratories and audiovisual materials. In illustrating pathological conditions and health care functions, audiovisuals are excellent tools. Also, the use of audiovisual materials and learning laboratories permit more efficient use of faculty time, which is an important consideration in scheduling clinical education.

Each allied health discipline has its particular equipment needs. Dental allied health programs are among the most expensive, since the college must provide fully equipped dental chairs and dental laboratory equipment. In addition, dental hygiene programs usually have on-campus clinics where clients from the community come for services.

Some allied health disciplines, whose practitioners use sophisticated equipment, such as computer axial tomography scanners and cobalt therapy units, depend on clinical facilities for these items. Use of some equipment requires a team of specialized health professionals who are usually available only in a tertiary clinical facility. Also, with the rapidly changing technology in the health fields, investment of educational funds in expensive medical equipment that may become obsolete within a few years is not desirable. The affiliated clinical facility will maintain modern equipment for its patients and there is no need to duplicate such items on college campuses.

Clinical Affiliations

Educational institutions, except those universities which have their own teaching hospitals, negotiate agreements with hospitals and health agencies for clinical education in the allied health disciplines.

There are three types of clinical affiliations in which colleges participate:

1) Students from a college-based educational program go to a hospital or health agency for clinical education.

2) Students from a hospital-based

program go to a college or university for general academic courses.

3) Students complete academic coursework in a college then enter a semi-independent period of full-time clinical instruction.

Selection of clinical affiliates by educational institutions is an important phase of planning an allied health program. Some of the factors in assessing clinical facilities include the following:

Size of the Facility — For most allied health disciplines, the clinical facility should be large enough to provide examples of a range of illnesses appropriate to the discipline. In some instances, effective educational programs in the allied health disciplines have been developed in a group of community hospitals. In disciplines where allied health practitioners exercise a high degree of independent judgment, it is desirable to have a broad clinical experience with a variety of physical problems. Often specialty hospitals, such as hospitals for handicapped children, become desirable clinical affiliates for specialties, such as physical therapy or occupational therapy.

Facility Accreditation — The Joint Commission on Accreditation of Hospitals (JCAH) is the accrediting agency for hospitals and health facilities. It is sometimes required and usually preferable to have clinical affiliations in JCAH-accredited hospitals.

Range of Services — The range of services offered in a clinical facility is important in providing students with broad clinical experiences. For example, hospitals with burn centers, newborn intensive care units, extensive outpatient clinics and other specialty areas can involve students in clinical situations which are not available in hospitals with emphasis on general acute care and limited surgery.

Clinical Staff Expertise — The clinical staff is to the hospital what the faculty is to the college. In each case, the quality of the program is largely dependent on the expertise of the people involved. Clinical facilities with a variety of medical and nursing specialists and allied health practitioners provide the most desirable climate for educational programs. In assessing the clinical staff, the number of specialties represented in the medical and allied health staff is important.

Utilization of Allied Health Practitioners — Some clinical facilities assign allied health practitioners responsibilities consonant with their preparation and abilities. In other cases, allied health practitioners are limited in function by hospital policies, or they are assigned duties beyond the scope of their specialties. Students have optimal clinical experiences in facilities where allied health practitioners perform the services for which they were prepared.

Supportive Services and Equipment — Allied health practitioners function as members of a health-care team, so the relationship to other components of the team is important in the learning experience. If the coordination between services is weak or if some of the support services are lacking, there will be gaps in the educational experience.

Equipment in the clinical facility—with staff skilled in its use—is necessary for the educational program. The equipment should be reasonably current and of the kinds in general use in other facilities where graduates will seek employment.

Educational Philosophy of the Facility Administration — The administration establishes the facility's attitude toward educational programs. This attitude can range from highly encouraging to indifferent or bordering on hostile. It is not desirable for the clinical facility to be so enthusiastically supportive of

educational programs that the service programs are in any way de-emphasized. Ideally, the facility administration should set a tone of commitment to educational programs, while maintaining a good balance which places highest priority on delivery of quality health care service to patients.

In negotiating clinical affiliations, the institution responsible for the educational program should take the initiative. If the program is based in a college, the college program director supported by appropriate members of the college administration should make the initial overtures to a clinical facility. The detailed negotiation should be conducted by the program director, who is the person with expertise in the allied health educational program.

If the clinical facility is negotiating to have its students accepted for academic work in a college, the college will have two areas which will be directly affected: the departments offering the coursework and the admissions office. Educational programs in hospitals often involve different admissions criteria from those used by institutions of higher education, and it is important for the college to delineate its admissions requirements early in the affiliation negotiations.

Any collegiate-clinical affiliation should be formalized by a written agreement, preferably in the form of a contract or a memorandum of agreement. The document should specify which individuals, by position titles, will be responsible for educational coordination. In the case of college students going into a clinical facility, the written agreement should establish a mechanism for determining the details of coordinating the program, such as scheduling, numbers of students, etc. The agreement should be quite specific as to who has responsibility for supervision of students. When faculty members from the college go with students into the clinical setting, provision should be made for orientation of the faculty members to hospital policies and procedures. Coordination of patient-care services and educational programs, with lines of authority clearly indicated, should be detailed. Once the terms of the agreement have been determined, the document should be reviewed by legal counsel for each institution.

The type of clinical affiliation in which there is the least amount of coordination between educational institutions and clinical facilities is one in which students complete academic preparation in a college then go into full-time clinical education. This is best illustrated in traditional medical technology programs, in which students frequently take three consecutive academic years, then spend a year in an approved clinical facility. At the completion of the clinical year, the college confers a bachelor's degree.

In some cases, educational institutions and clinical facilities have developed affiliation arrangements which provide a coordinated, predictable program for students. In many cases, however, the clinical facility selects its clinical students from applicants from a number of colleges. When the college has no firm agreement with a clinical facility on the number of students to be accepted each year, students often complete the three collegiate years then have their acceptance into the clinical phase delayed by one or more years. Some qualified medical technology students never gain admission to the clinical phase.

A similar situation exists in the clinical internship in dietetics. Graduates from most dietetics programs seek their own clinical internship sites. Now, some of the educational programs are revising their curricula to incorporate the clinical experience into the collegiate program so that by graduation the clinical education requirements of the American Dietetics Association have been met.

The *laissez-faire* collegiate-clinical arrangement which forces students to seek their own clinical education produces a high rate of attrition. In planning or

maintaining an allied health educational program which requires a period of full-time clinical education, colleges have responsibility for direct involvement in placement and educational supervision of the clinical period.

Clinical affiliations are a necessary component of allied health education. These affiliations are mutually rewarding to the college and hospitals involved when agreements are clear and when there are good mechanisms for communications.

PLANNING

When an educational institution proposes to initiate an allied health education program, there are planning factors to be considered. Agencies which will be involved directly or indirectly in the planning process include health planning agencies, program-approval agencies and state higher education agencies for public institutions.

Planning Sequence

Allied health education programs will follow the planning sequence of any new educational program, with some additional considerations involved.

The proposed program should include the following components:

- Program justification — needs assessment
- Program objectives
- Curriculum
- Faculty
- Description of clinical affiliates
- Estimated enrollment
- Start-up budget
- Continuation budget
- Estimated program income
- Methodology for program evaluation
- Documented support of professional groups, employers, etc.

Program Justification

Historically, academic programs have not had to justify their existence in regard to need for the programs and employment potential for graduates. However, allied health educational programs are expensive and they will ultimately have some impact on public funds, either in state funds for higher education, public monies for the clinical facility or federal third-party payments for employment of allied health graduates.

A first step in justifying the need for the educational program is to define the geographical service area of the college or university in which a majority of the alumni are employed. There may be factors to indicate that the allied health graduates will seek employment in geographic patterns different from those of other graduates and such anticipated variations should be documented. The service area is easily defined for a community college but it becomes more complex for a specialized institution, such as a health science school, which serves an entire state or region.

Once the geographical area is established, there are several bases for projecting the justification for an allied health program. One frequently used method is that of projecting "need" for the graduates. A "need" estimate is based on an ideal number of practitioners in relation to a population or a population segment. The ideal ratios are usually established by the judgment of experts in the field. For example, a ratio in common use is the "need" for 450 registered nurses per 100,000 people. There are few established ratios in allied health, although some estimates exist for particular services. While such ratios for determining "need" provide generally acceptable documentation, their users should recognize that such estimates are highly imprecise projections.

A more realistic projection can be developed by assessing "demand"—the number of positions in an allied health specialty which will probably be open to graduates of the program. Demand estimates can be based on information

from prospective employers, who should be asked to report their existing vacancies for which funds are budgeted, and their estimates of actual employment demand for the next three to five years.

The turnover rate should also be considered in assessing demand for any allied health specialty. If the number of budgeted vacancies is near the number of individuals who will be graduated from the allied health program within the first three or four classes, and the turnover rate is low, there is indication that the demand will be met when the existing vacancies are filled.

If the turnover rate is exceptionally high, efforts should be made to determine why practitioners do not stay in the area. If the high turnover rate results from a serious shortage of practitioners so that workers leave for more lucrative jobs elsewhere, the demand for practitioners will probably continue at a high level. If high turnover results from poor working conditions or low pay, the employer demand will continue but student recruitment will be difficult.

All geographic areas do not need, nor can they use, all types of allied health practitioners. For example, in states where licensure provisions require that physician assistants must have direct supervision from physicians, there will not be a market in geographic areas where there are no physicians.

Information on hospital occupancy is useful in program justification in those fields where employment is primarily in hospitals. Practices of the hospitals are significant in estimating demand for practitioners. For example, if all the hospitals in an area require chest X-rays for patients in the admissions procedure, there will be a predictable demand for radiologic technologists.

Measuring need or demand in allied dental health programs presents greater difficulties because of the great variation between need and demand. Dental cavities have been identified as the most prevalent health problems in the United States, but the number of people who seek dental care is relatively low. Employment in the allied dental health fields must be measured by demand for dental care and the willingness of dentists in an area to employ auxiliary staff.

There is no methodology in current use which produces consistently accurate predictions of future need for health practitioners. For purposes of consistency, it is usually desirable to apply whatever methodology of needs assessment is most favored by educational institutions and health planning agencies in the area, since this will permit some comparability of program projections.

Projecting Enrollment and Recruitment

An adequate and continuing enrollment is necessary for a successful and economically feasible allied health program in an educational institution. Allied health education programs in hospitals can function with low enrollment or with periodic offerings of particular programs since the faculty can be diverted to full-time health care service if they are not teaching, but educational institutions must have a continuous intake of new students in order to survive. Techniques for enrollment estimates, developed by college admissions specialists, are generally more dependable than are the methodologies in estimating health manpower need and demand.

Enrollment projections and program costs can be used as a measure to determine the enrollment break-even point at which the number of students justifies the expense of a program. Obviously, in an educational institution, an allied health program which graduates only two or three students a year is not economically feasible.

In determining the optimum class size, the clinical education component is the most important factor. Generally, enrollments in allied health disciplines should be planned in multiples of the number of students per faculty member in the clinical facility. In allied dental health disciplines, any increase in class size will

require additional dental chairs and other items to be purchased by the college.

Special student recruitment for allied health programs may be desirable because many of the allied health specialties are relatively unknown among prospective students. Young people have had their major health contacts with physicians, dentists and nurses, and know relatively little about allied health specialties. Since the decision to enter an allied health discipline must often be made by first-term freshmen, it is important for potential students to be aware of the allied health specialty as a career option as early as possible.

For educational institutions which are a part of a state's higher education system, a review of the program proposal by the state higher education agency is a step in the planning process. At this level there must be coordination of allied health education programs in order to avoid unnecessary duplications or conflicts of programs serving the same area.

The program plan may be reviewed by the appropriate professional accreditation association if the institution desires reasonable assurance that it can expect accreditation. If the field comes under state licensure, the state licensure board may review the program or wait until accreditation has been determined.

Health Systems Agencies (HSA) have official responsibility for health planning within their geographic areas. If there are no federal health funds involved in the allied health educational program, there is no requirement that the proposal be reviewed by the HSA. However, close liaison with the HSA during the program-planning period will be helpful for the educational institution in developing area manpower projections. The HSA may be the best source of information on need for the program and employment potential.

SUMMARY

Allied health disciplines bring some new factors into the realm of higher education. In few other families of disciplines is the educational output so closely tied to marketplace demand. Rarely in higher education is so much of the educational time spent away from the college campus as is required for clinical education in health disciplines.

The group of disciplines which comprise allied health are in a fluid state. New disciplines are emerging and, increasingly, as individual allied health specialties reach a stage of maturity and recognition, practitioners object to inclusion in the allied health category. All allied health disciplines are undergoing change—in the scope of practice, in techniques, and in relation to other health specialties. Some of the allied health disciplines are still seeking an appropriate niche in higher education and their basic professional programs are offered at associate degree, baccalaureate, and master's levels.

Staffing allied health educational programs requires special consideration. In those specialties where the educational requirement for entry into practice is customarily below the baccalaureate level, there is usually a shortage of practitioners with academic credentials for faculty status. Teaching loads in the health disciplines are not compatible with the credit hours of courses, since clinical teaching requires a low faculty/student ratio. Each allied health program must negotiate with a clinical facility to determine if clinical instructors will be supplied free, if they will be provided at a cost to the college, or if the college must employ its own clinical instructors.

Clinical education is the unique characteristic of the health disciplines. While many career programs include practical experience in the curriculum, in the health specialties the quality of student performance is critical. Also in the health disciplines the time allocated for clinical education places more emphasis on practical experience than is customary in other collegiate career programs.

In developing allied health programs, colleges must work with several different publics. Professional organizations set standards and accredit educational programs. State licensure boards approve some educational programs and register their graduates. Health planning agencies forecast health manpower needs and review requests for federal health funds.

Allied health educational programs are expensive to initiate and to maintain. Comparable cost data are difficult to obtain because of the differences in identifying expense items among the colleges and universities reporting the costs of their health disciplines. Generally, the cost per student per year is significantly higher in the allied health disciplines than it is for a student in the arts and sciences in an educational institution.

Increasingly in the future the emphasis in allied health education will be on quality rather than quantity. With the expansion of educational programs in the last decade there is a possibility of overproducing some allied health specialists.

With the emphasis on proficiency in practice, the allied health disciplines are different from the more traditional collegiate curricula. Initiating allied health programs on college campuses requires thoughtful planning.

Informational Resources

The American Society of Allied Health Professions
Suite 300, One Dupont Circle
Washington, D.C. 20036 Phone No. (202) 293-3422
(Maintains information and inventories on allied health education and publishes such materials as the multivolume *Collegiate Programs in Allied Health Occupations.)*

The Committee on Allied Health Education and Accreditation
American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610 Phone No. (312) 751-6000
Publication orders: AMA Order Department OP-393
P.O. Box 821
Monroe, Wisconsin 53566
(Publishes the *Allied Health Education Directory* and can supply information on the disciplines accredited by CAHEA.)

Division of Associated Health Professions
Bureau of Health Manpower
Health Resources Administration, Public Health Service
Department of Health, Education, and Welfare
3700 East-West Highway
Hyattsville, Maryland 20782 Phone No. (301) 436-6835
(Maintains information on health professions and occupations.)

National Center for Health Statistics
Health Resources Administration, Public Health Service
Department of Health, Education, and Welfare
3700 East-West Highway
Hyattsville, Maryland 20782 Phone No. (301) 436-8522
(Maintains health information and publishes various reference documents, such as *Health Resources Statistics.)*

National Health Council
1740 Broadway
New York, New York 10019 Phone No. (212) 582-6040
(Maintains information on health careers.)

Resources Within States:

State Health Planning and Development Agency
(Information on state health plans and health manpower needs.)

State Licensure Boards for Health Professions
(Information on the approval process for educational programs and requirements for practice.)

State Department of Health or Human Resources
(Information on health status and sometimes information on existing health manpower.)

State Department of Labor
(Information on employment.)

State Hospital Association
(Information on need and demand for health practitioners, and numbers of individuals employed in hospitals.)

State Chapters of Health Professions Organizations
(Information on professional consideration in the health disciplines.)